

REMARKS

Claims 1-14 are pending in this case and all pending claims have been rejected.

Claims 1-6 and 10-11 have been amended to correct informalities.

Claims 1-14 stand rejected under 35 USC 102(b) as being anticipated by Yanai et al (US Patent No. 5,544,347). The rejection of claims 1-14 is respectfully traversed.

Claim 1 provides:

1. A method for logging data written by a host computer to a local data storage system including a local array of data storage devices and a first array controller and a second array controller coupled to each other and also coupled between the host computer and the array, wherein the data is replicated on a remote storage system connected to the local data storage system by at least one link, the method comprising the steps of:

storing, on a log unit in primary cache memory in the first array controller, the data and associated command for every write transaction that occurs between the host computer and the local array, wherein the primary cache is mirrored in backup cache memory in the second array controller;

sending the data to the remote storage system to create a remote copy; and

in the situation wherein the remote copy has not successfully completed and the first array controller has failed, then re-playing the data on the log unit by performing the steps of:

for each entry in the log unit mirrored in the backup cache:

reading the data from the backup cache for each said transaction in the log unit; and

writing the data to the remote storage system in transaction order.

Claim 10 provides:

10. A method for merging data, written by a host computer to a local data storage array with a backup copy of the data written to a remote storage system, after a first array controller for the local storage system has been inaccessible for a period of time, wherein both the first array controller and a second array controller are coupled to each other and to the local data storage array, the method comprising the steps of:

- storing the data for each write transaction from the host computer in mirrored cache memory in both the first array controller and the second array controller;

- storing command information including the LBN extent associated with the data in a log in mirrored cache memory in both the first array controller and the second array controller;

- sending a write completion status to the host;

- sending the data to the remote storage system;

- wherein, if the first controller fails before the data, for which said completion status was sent to the host, is successfully copied to the remote storage system, then

- merging the data, stored on said log, with the backup copy in the remote storage system, in response to commands issued by the second array controller, by using the command information stored in the log to write the data associated therewith to the remote data storage system in the order in which each said write transaction originally occurred.

Support for claims 1 and 10 is found generally throughout the specification and claims and in particular at page 21, line 18 through page 24, line 16 of the specification ("Asynchronous System Operation").

Claims 1 and 10 both include a limitation that at least part of the claimed method occurs after the first array controller has failed or is inaccessible.

In contrast, Applicants can find no specific teachings regarding the logging operation upon failure of the first array controller in Yanai et al. Yanai et al appears only to teach a log for when the links fail or remote controllers fail.

It is deemed that claims 1 and 10, therefore, contain a limitation not taught in the cited prior art, and therefore claims 1 and 10 are deemed to be allowable under 35 USC 102(b). The remaining pending claims 2-9 and 11-14 are also deemed to be allowable as depending from an allowable base claim.

In view of all of the above, claims 1- 14 are believed to be allowable and the case in condition for allowance which action is respectfully requested.

Should the Examiner be of the opinion that a telephone conference would expedite the prosecution of this case, the Examiner is requested to contact Applicants' attorney at the telephone number listed below.

No fee is believed due for this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 08-2025.

Respectfully submitted,



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